

Modified variational iteration method for solving nonlinear partial differential equation using Adomian polynomials

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The aim of this paper is to solve numerically the Cauchy problems of nonlinear partial differential equation (PDE) in a modified variational iteration approach. For this purpose, the standard variational iteration method (VIM) is modified using the standard Adomian polynomials in decomposing the nonlinear terms of the PDE. Hence, the modified VIM was used to solve nonlinear PDEs with the aid of Maple 18 software, and resulting numerical evidences were compared with the standard VIM to convergence, accuracy and effectiveness. The results obtained show that the modified VIM is a better approximant of the above nonlinear equation than the traditional VIM.

Keywords: Iteration method; equations; result.